

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of:

Implementation of Sections 309(j) and 337 of	)	
The Communications Act of 1934 as Amended;	)	WT Docket No. 99-87
Promotion of Spectrum Efficient Technologies	)	
On Certain Part 90 Frequencies.	)	

**REQUEST FOR WAIVER OF COMMISSION RULES REGARDING THE  
SPECTRAL EFFICIENCY OF PRIVATE LAND MOBILE RADIO SERVICES IN  
THE 150-174 AND 450-470 MHZ BANDS, REQUIRING 12.5 KHZ CHANNEL  
BANDWIDTH OR EQUIVALENT TECHNOLOGY BY JANUARY 1, 2013**

**WAIVER—EXPEDITED ACTION REQUESTED**

**I. Introduction**

The County of Augusta, Virginia ("County") respectfully requests a waiver of the January 1, 2013 narrowband deadline pursuant to the *Public Notice* released by the Federal Communications Commission (FCC or Commission)<sup>1</sup> for a period of 24 months, until January 1, 2015.

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<sup>1</sup> Wireless Telecommunications Bureau, Public Safety and Homeland Security Bureau, and Office of Engineering and Technology Provide Reminders of the January 1, 2013 Deadline for Transition to Narrowband Operations in the 150-174 MHz and 421-512 MHz Bands and Guidance for Submission of Requests for Wavier and Other Matters, *Public Notice*, 26 FCC Rcd 9647 (2011) and Wireless Telecommunications Bureau, Public Safety and Homeland Security Bureau, and Office of Engineering and Technology Provide Reminders of the January 1, 2013 Deadline for Transition to Narrowband Operations in the 150-174 MHz and 421-512 MHz Bands and Guidance for Submission of Requests for Wavier and Other Matters, *Public Notice*, DA 12-246, rel. Feb. 21, 2012.

The County supports the Commission's efforts to establish greater spectral efficiency, and has been taking measures to transition to narrowband operations. As detailed in this WAIVER PETITION, certain unique construction requirements and situations will impact the County's ability to meet the compliance date of January 1, 2013, established by 47 CFR. §90.209(b).

## **II. Background**

The County is situate with radio transmitting sites within the defined Quiet Zone (QZ)<sup>2</sup>. This presents an extremely challenging radio frequency environment for effective wireless communications. The County's communications system supports public safety activities for police, fire and emergency medical communications.

The County has already made extensive efforts to bring its communications systems into compliance with the January 1, 2013 narrowbanding mandate. The current radio system utilized by the County is wideband analog (20K0F3E maximum authorized bandwidth). The County has authorized funds and made plans to re-program fixed base and subscriber units to implement a narrowband (11K3F3E) analog operation. The County has obtained modified FCC authorizations to permit the conversion to narrowband. However, the narrow banding of the radio license authorizations has caused the National Radio Astronomy Observatory (NRAO) to revoke previous approvals and apply severe restrictions to the signal density levels. This change in directional effective radiated power (dERP) will cause the County to re-configure the system adding additional sites in order to recover lost coverage in the jurisdictional area required for public safety operations of the County. This unanticipated additional infrastructure will exceed

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<sup>2</sup> 47 CFR § 1.924(a) Quiet Zones - intended to minimize possible interference at the National Radio Astronomy Observatory site located at Green Bank, Pocahontas County, West Virginia, and at the Naval Radio Research Observatory site at Sugar Grove, Pendleton County, West Virginia.

the current budget for narrow banding and make it impossible to comply with the January 1, 2013 deadline, while also assuring uninterrupted effective communications. Further, this additional infrastructure will require site development, equipment purchase, and backhaul systems, all of which could not be procured and installed prior to the deadline, even if monetary resources were not an issue.

Pursuant to Section 1.925 of the Commission's rules, the Commission may waive the application of a rule if the petitioning party establishes either that:

"(i) the underlying purpose of the rules would not be served or would be frustrated by application to the instant case, and that a grant of the requested waiver would be in the public interest; or  
(ii) In view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative."<sup>3</sup>

In addition, in its *Public Notice*, the Commission provided various criteria that would be relevant to its analysis of whether to grant a waiver of the narrowbanding deadline under Section 1.925.

Consistent with the *Public Notice*, the instant Petition describes the efforts made by the County to meet the narrowbanding mandate and provides timeframes for completing the process.

The County will show that inflexible enforcement of the January 1, 2013 deadline with respect to the spectrum described in this petition would be contrary to the public interest of ensuring the safety and well-being of County residents, businesses, and visitors; and in addition compromise

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<sup>3</sup> 47 C.F.R. § 1.925(b)(3)(i)-(ii).

the safety and efficiency of the public safety emergency responders. Thus, the County seeks this waiver for extension of the narrowbanding deadline in the manner described

The County seeks a waiver for specific call signs (see Appendix A) for operations that will continue on lower spectrum bands and will be taken to compliance by the end of the WAIVER period. This list includes call signs and frequencies that are both directly and indirectly impacted by NRAO determinations. Appendix B lists the directly impacted licenses, showing the pre and post narrowband ERP limits.

### **III. Steps Taken by County Agencies to Comply with the Narrowbanding Mandate**

The County operations will continue on frequencies in the 450-470 MHz range. These lower frequency systems will be taken into compliance with narrowband in accord with the Schedule C attachment.

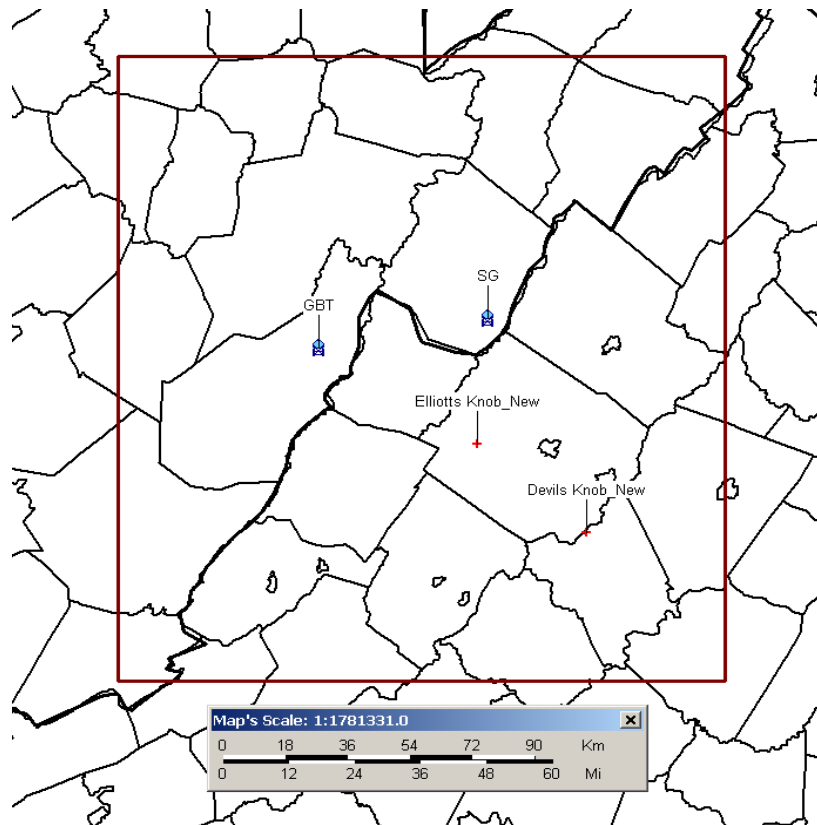
The County expected that conversion from wideband analog to narrowband analog would be a relatively inexpensive and speedy process. Sufficient funding was set aside to transition compatible hardware from wideband to narrowband through reprogramming of the transmitters and receivers. Funding was also anticipated and secured to replace subscriber units where the age of the unit did not allow for narrowband analog operation. Sufficient time was provided to allow for the reconfiguration of the County systems.

The first step in the process was to add narrowband analog emission to the County licenses.

These licenses have been processed and approved by the Commission. The next step would have been to commence system conversion to meet the required cut-over time. Unfortunately this is where the process has stalled.

#### IV. Specificity of Transition Delay

In 1998, the County objected to limits placed upon the licenses located in the QZ. After several meetings with the NRAO in Greenbank, the County was permitted to conduct on-the-air testing to determine the extent of propagation of the signals toward the NRAO antenna. In a report<sup>4</sup> by the NRAO prepared by Mr. McKinnon, the signal density received at the Greenbank telescope was measured, which determined maximum permitted power for the Augusta County systems located at Elliott Knob (Location 1) and at Devil's Knob (Location 2). The dERP permitted toward the NRAO was 212 watts from Location 1 and 25 watts from Location 2. The County has been compliant with this limit and has not, to our knowledge, caused any interference to the radio astronomy activities at Greenbank (GBT) or Sugar Grove (SG).



<sup>4</sup> The Power Density of Augusta County Transmitters at 460.3 MHz, M.M. McKinnon, November 3, 1998.

At the time of licensing the existing frequencies in narrowband emission at the existing sites the NRAO determined, and the Commission endorsed by Special Condition, that the effect of narrow banding will void the 1998 testing and the NRAO could attach limits based upon predicted interference. The result was that Location 1 limit changed from 212 watts to 1.5 watts dERP and Location 2 limit changed from 25 watts to 1.4 watts dERP toward the NRAO.

The reduction of signal level and the resulting loss of area of coverage in the County were completely unanticipated. Communication with the NRAO and a meeting at Greenbank with the NRAO as recent as June 28, 2012, failed to produce any concession with the recommendation.

The County and NRAO continue a dialog to reach consensus. The NRAO contends:

1. Conversion of the existing transmitters to narrowband voids the 1998 testing and increases interference to the site.
2. The NRAO can revert to using propagation modeling for interference analysis.
3. The NRAO does not current have the staffing of resources to perform a new interference test.
4. The limits imposed by the NRAO and endorsed by the Commission by Special Condition are non-negotiable.

The NRAO suggested, and the County concurs, that the only way to recover the lost coverage is to expand the County system with additional transmitter sites. The County has lost significant coverage in the area of jurisdiction, particularly in some of the county high population areas.

Operation at the NRAO restrictions, without significant system modification is an unacceptable compromise to the safety and effectiveness of the public safety emergency responders and to the safety and welfare of the citizens they serve.

The County has begun a process of defining the location of additional transmitters to provide coverage to the area lost to the NRAO restrictions. This is a complicated process that involves the following considerations:

1. Identifying possible transmitter sites.
2. Requesting NRAO review of the candidate sites.
3. Upon favorable NRAO review, determine if the site currently has a sufficient antenna structure
4. Apply for FCC Antenna Registration for new or modified construction
5. Comply with the new FCC antenna registration regulations for Environmental Compliance, including 30 day public notice.
6. Address public concerns and wait for the FCC to rule on the site approval.
7. Construct or modify the antenna structure
8. Determine backhaul requirements.
9. Purchase and install transmitters.

Assuming that cost was not a factor, the time to complete the infrastructure design, procurement and construction would place the County well outside of the January 1, 2013 narrowband compliance date.

Although the County did budget and provide what was considered sufficient funding and time to meet the narrowband requirement, once the new system design is completed and the costs are known, the County must budget additional funding and time for the system expansion. This is currently an unbudgeted item, as the County being reasonably prudent, did not anticipate that a simple reduction in bandwidth would require a full system redesign and additional sites. The end

cost above the original narrowband estimate will not be known until the new sites are found and the costs for the sites determined. At present it is anticipated that two or three sites will be required to restore coverage, however until the actual system is redesigned to NRAO specifications, the exact number and location of the additional sites will not be known.

## **V. Projected Impact to Other Licensees by Grant of the Waiver**

### **A. Impact to existing licensees.**

The County anticipates that there will be no negative impact to any other licensees that are licensed and operating today. The County is currently operating in wideband (20 kHz maximum occupied bandwidth) and will continue to operate in wideband until the end date of the waiver. There will be no change to existing licensees operation or interference level. Quite the contrary, as other existing licensees on adjacent channels comply with the FCC's narrowband mandate; the possibility of receiving interference from the County will be significantly reduced.

### **B. Impact to a future licensee at UHF (450-470 MHz).**

The County is currently operating on UHF channels with wideband (20 kHz maximum occupied bandwidth) emission. The FCC has authorized interstitial channels at UHF that are spaced at 12.5 kHz on center. Many licensees have applied for authority to operate narrowband systems on the offset channels and are using geographic spacing to attain about 30 dB of Adjacent Channel Protection, which is the Adjacent Channel Coupled



Power (ACCP) value assumed for UHF<sup>5</sup>. There will be no impact to these narrowband stations due to the continued operation of the County at wideband. There will be an undermined impact on the ability for new licensees to license channels at 12.5 kHz offset to the County, without the need to consider geographic spacing to attain adjacent channel protection. Without knowing which potential licenses may apply for the UHF spectrum, it is not possible to quantify the degree of impact. Since many of the 12.5 kHz UHF channels are already licensed, or could be licensed, with geographic spacing from the County, the only remaining area of operation impacted would be within or immediately adjacent to the County proper. The County knows of no licensees waiting to obtain licenses within the current coverage area that would be impacted by a delay in narrowbanding.

## **VI. CONCLUSION**

As shown above, the County has worked diligently and in good faith to meet the Commission's narrowbanding mandate, without risking the safety of the public or the safety and efficiency of the emergency responders. The exhaustive process of conforming to revised NRAO spectral density limits, while still maintaining current systems at the highest performance levels, will cause a significant delay in narrow banding. Were it not for the complexity and uncertainty of NRAO conformance, the County would have been able to meet the January 1, 2013 NARROWBANDING requirement.

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<sup>5</sup> See FCC DA97-2006 and Letter from Larry A. Miller, President, LMCC, to Daniel B. Phythyon, Chief, Wireless Telecommunications Bureau, Federal Communications Commission (Sept. 10, 1997).

The County has described its efforts to date, and proposes a schedule for meeting the narrowbanding mandate in Appendix C.

For the reasons stated and in consideration of the public safety issues involved; and the impact that NRAO has had on County planning, the Commission is PETITIONED to grant the waiver of NARROWBAND compliance to January 1, 2015.

Respectfully submitted,

*/s/ Patrick J. Coffield*

County Administrator  
County of Augusta  
18 Government Center Lane, P.O. Box 590  
Verona, Virginia 24482

**APPENDIX A****LIST OF FCC RADIO AUTHORIZATIONS GRANTED TO THE COUNTY OF AUGUSTA, VA FOR WHICH WAIVER OF THE JANUARY 1, 2013 NARROWBAND OPERATION DEADLINE IS REQUESTED**

callsign	FRN	Freq	class	Serv
KDA670	0002036044	451.0250	FB2	PW
KDA670	0002036044	451.0750	FB2	PW
KDA670	0002036044	456.0250	MO	PW
KDA670	0002036044	456.0750	MO	PW
KNFY393	0002036044	460.4000	FB2	PW
KNFY393	0002036044	465.0750	MO	PW
KNFY393	0002036044	465.4000	MO	PW
WNMW815	0002036044	453.7500	FB2	PW
WNMW815	0002036044	453.9250	FB2	PW
WNMW815	0002036044	458.7500	MO	PW
WNMW815	0002036044	458.9250	MO	PW
WPHE291	0002036044	458.3000	MO	PW
WPHE291	0002036044	460.3000	FB2	PW
WPHE291	0002036044	465.3000	MO	PW
WPKQ976	0002036044	460.5500	FB2	PW
WPKQ976	0002036044	465.5500	MO	PW
WPPC506	0002036044	456.0250	FX	PW
WPPC506	0002036044	458.0750	FX	PW
WPPC506	0002036044	458.9250	FX	PW

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WPPC506	0002036044	458.7500	FX	PW
WZM674	0002036044	462.9500	FB2	PW/PM
WZM674	0002036044	462.9750	FB2	PW/PM
WZM674	0002036044	463.0000	FB2	PW/PM
WZM674	0002036044	463.0250	FB2	PW/PM
WZM674	0002036044	463.0500	FB2	PW/PM
WZM674	0002036044	463.0750	FB2	PW/PM
WZM674	0002036044	463.1000	FB2	PW/PM
WZM674	0002036044	463.1250	FB2	PW/PM
WZM674	0002036044	463.1500	FB2	PW/PM
WZM674	0002036044	463.1750	FB2	PW/PM
WZM674	0002036044	467.9500	MO	PW/PM
WZM674	0002036044	467.9750	MO	PW/PM
WZM674	0002036044	468.0000	MO	PW/PM
WZM674	0002036044	468.0250	MO	PW/PM
WZM674	0002036044	468.0500	MO	PW/PM
WZM674	0002036044	468.0750	MO	PW/PM
WZM674	0002036044	468.1000	MO	PW/PM
WZM674	0002036044	468.1250	MO	PW/PM
WZM674	0002036044	468.1500	MO	PW/PM
WZM674	0002036044	468.1750	MO	PW/PM
WPLX499	0005517081	458.7500	FX	PW
WPLX500	0005517081	458.7500	FX	PW
WPLX501	0005517081	458.7500	FX	PW

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COUNTY OF AUGUSTA, VIRGINIA

WPLX523	0005517081	465.5500	FX	PW
WPLX524	0005517081	460.5500	FB	PW
WPLZ932	0005517081	460.5500	FB	PW
WPLZ935	0005517081	460.5500	FB	PW
WPLZ935	0005517081	465.5500	FX	PW
WPZR590	0007189301	451.2500	FBT	IG

**APPENDIX B - LICENSES DIRECTLY IMPACTED BY NRAO ERP LIMITS  
SHOWING PRE AND POST NARROWBAND LIMITS.**

Call Sign	File #	Location	NRAO ERP	Band	Year Issued
WNMW815	0001830925	1	212	453	2004
WNMW815	0001830925	3	25	453	2004
WNMW815	0004246819	1	1.5	453	2010
WNMW815	0004246819	3	1.4	453	2010
WPHE291	0002085437	1	212	460	2004
WPHE291	0002085437	3	25	460	2004
WPHE291	0004855371	1	1.5	460	2012
WPHE291	0004855371	3	1.4	460	2012
WPKQ976	0001820193	1	212	460	2004
WPKQ976	0001820193	3	25	460	2004
WPKQ976	0004246816	1	1.6	460	2010
WPKQ976	0004246816	3	1.4	460	2010
KDA670	0001771397	1	212	451	2004
KDA670	0001771397	3	25	451	2004
KDA670	0004246817	1	1.5	451	2010
KDA670	0004246817	3	1.4	451	2010
KNFY393	0002085439	1	212	460	2005
KNFY393	0002085439	3	128	460	2005
KNFY393	0004845364	1	1.5	460	2012
KNFY393	0004845364	3	1.4	460	2012
WZM674	0001727654	1	212	463	2004
WZM674	0001727654	3	25	463	2004
WZM674	0003344083	1	4.2	463	2008
WZM674	0003344083	3	25	463	2008

**APPENDIX C                      Narrowbanding Time Schedule**

Now until January 1, 2013

The County will continue in earnest with complying with the NRAO spectral density limits by proposing to the NRAO sites that may be approved to provide coverage recovery.

January 1, 2013 to March 1, 2013

The County will finalize the new system design and apply for approval to construct and or modify antenna structures

March 1, 2003 to June 1, 2013

The County will estimate the costs, in addition to the anticipated narrowband costs, to add the additional sites and backhaul. The County will budget this additional expenditure.

June 1, 2013 to December 31, 2013

The County will initiate bidding and purchase order issues to fund the transition to narrowband and the construction of the additional sites.

January 1, 2014 to September 1, 2014

The County will complete system reconfiguration to narrowband and will begin system acceptance testing with public safety users and with the NRAO.

September 1, 2014 to January 1, 2015

The County will complete system testing and accept the system contingent upon NRAO inspection and approval.